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AMENDMENT AND RESPONSE UNDER 37 CFR § 1.111

Serial Number: 09/896.206

Filing Date: June 29, 2001

Title: SYSTEM AND METHOD FOR EFFICIENT DISPATCH OF INTERFACE CALLS

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Dkt: P11235**IN THE CLAIMS**

Please amend the claims as follows:

1-16. (Cancelled)

17. (Currently Amended) A ~~computer-implemented system for implementing an interface for~~
~~accessing data in a class in an object-oriented programming environment, the system~~ comprising:

a first interface D and a second interface E;

memory to store data corresponding to the first interface D;

a class G configured to implement interface D and interface E;

a first function G1 that is a member of class G and a member of interface D;

a second function G2 that is a member of class G and a member of interface D but not a member of interface E;

a third function G3 that is a member of class G and a member of interface E but not a member of interface D;

a first interface vtable G.D comprising a first pointer configured to point to function G1 and a second pointer configured to point to function G2;

a second interface vtable G.E comprising a ~~first~~ third pointer configured to point to function G1 and a ~~second~~ fourth pointer configured to point to function G3; and

an object, the object being an instance of class G;

wherein, if the object is of type D, interface vtable G.D is used during runtime to connect functions G1 and G2 with the object; [[and]]

wherein, if the object is of type E, interface vtable G.E is used during runtime to connect functions G1 and G3 with the object;

wherein, at compile time, a compiler is to generate the first interface vtable G.D and the second interface vtable G.E that indicate an index for each function to be determined based on a definition of class G.

18. (Currently Amended) A system according to claim 17, wherein the object comprises:

an instance of interface D, the instance of interface D including a ~~third~~ fifth pointer to point to interface vtable G.D; and

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an instance of interface E, the instance of interface E including a ~~fourth~~ sixth pointer to point to interface vtable G.E.

19. (Previously Presented) A system according to claim 18, wherein the pointers in the vtables allow for casting of references of an interface type into references whose type is defined by the class configured to implement the interface for that interface type.

20. (Previously Presented) A system according to claim 17, wherein the object comprises: a fifth pointer configured to point to a canonical base address for the object.

21. (New) A system according to claim 18, wherein the fifth pointer is at a predefined offset from the fourth pointer.

22. (New) A system according to claim 18, wherein the fifth pointer is adjacent to the fourth pointer.